



MICHIGAN

OFFICE OF THE AUDITOR GENERAL

AUDIT REPORT

PERFORMANCE AUDIT
OF THE

OFFICE OF RAIL

MICHIGAN DEPARTMENT OF TRANSPORTATION

February 2015



Doug A. Ringler, CPA, CIA
AUDITOR GENERAL

The auditor general shall conduct post audits of financial transactions and accounts of the state and of all branches, departments, offices, boards, commissions, agencies, authorities and institutions of the state established by this constitution or by law, and performance post audits thereof.

– Article IV, Section 53 of the Michigan Constitution

Audit report information can be accessed at:

<http://audgen.michigan.gov>



OAG

Office of the Auditor General

Report Summary

Performance Audit

Office of Rail

Michigan Department of Transportation

Report Number:
591-0195-14

Released:
February 2015

The Office of Rail is responsible for 665 miles of State-owned rail lines. The State Rail Plan calls for the Office of Rail to provide a rail system that offers enhanced mobility for travelers and the efficient movement of goods while supporting economic development and environmental sustainability. The Office of Rail works to maintain and upgrade rail lines, to promote economic development on rail corridors, and to enforce safety regulations at railroad crossings. Since the start of calendar year 2011, passenger rail service in Michigan has averaged 790,000 rail passengers each year.

Audit Objective			Audit Conclusion
Objective 1: To assess the effectiveness of the Office of Rail's efforts to facilitate enhanced mobility for rail passengers and the efficient movement of goods within Michigan's rail system.			Moderately effective
Findings Related to This Audit Objective	Material Condition	Reportable Condition	Agency Preliminary Response
The Office of Rail expended \$9.5 million to lease and refurbish commuter rail cab and coach cars that it neither owns nor expects to use until at least 2017. In addition, the Office of Rail will be responsible for projected leasing costs of \$2.8 million, plus \$3.7 million in potential renovation costs for 14 coach cars. As a result, the Office of Rail did not effectively and efficiently oversee the lease and refurbishment of cab and coach cars designated for two commuter rail projects (Finding 1).	X		Agrees
The Office of Rail had not established a comprehensive performance measurement process to evaluate and improve the effectiveness of its operations. The broad range and importance of the Office of Rail's responsibilities and the Michigan Department of Transportation's (MDOT's) 20-year commitment of \$500 million to a high-speed rail program make it imperative that the Office of Rail establish a performance measurement process for evaluating its efforts (Finding 2).		X	Agrees

Audit Objective			Audit Conclusion
Objective 2: To assess the effectiveness of the Office of Rail's efforts to monitor contractors' performance related to the delivery of passenger rail service and the upgrade of passenger rail lines.			Moderately effective
Findings Related to This Audit Objective	Material Condition	Reportable Condition	Agency Preliminary Response
The Office of Rail did not properly identify all capital and maintenance expenditures related to the Dearborn to Kalamazoo: Service Development Program (<u>Finding 3</u>).		X	Agrees
The Office of Rail did not request federal funds on a timely basis for expenditures related to federal awards (<u>Finding 4</u>).		X	Agrees

Audit Objective			Audit Conclusion
Objective 3: To assess the effectiveness and efficiency of the Office of Rail's efforts to ensure the safety of grade crossings within Michigan's rail system.			Moderately effective
Findings Related to This Audit Objective	Material Condition	Reportable Condition	Agency Preliminary Response
The Office of Rail did not have a formal process to ensure timely routine maintenance inspections of all public at-grade highway railroad crossings (<u>Finding 5</u>).		X	Agrees
The Office of Rail did not have a process to verify the timely correction of maintenance deficiencies identified at public at-grade highway railroad crossings (<u>Finding 6</u>).		X	Agrees
The Office of Rail did not have a database system with the ability to generate all relevant railroad crossing inspection information necessary for the Rail Safety Section. Also, the Office of Rail did not ensure that its database system had proper access controls over user activity (<u>Finding 7</u>).		X	Agrees

A copy of the full report can be obtained by calling 517.334.8050 or by visiting our Web site at: <http://audgen.michigan.gov>

Office of the Auditor General
201 N. Washington Square, Sixth Floor
Lansing, Michigan 48913

Doug A. Ringler, CPA, CIA
Auditor General

Laura J. Hirst, CPA
Deputy Auditor General



OAG

Office of the Auditor General

201 N. Washington Square, Sixth Floor • Lansing, Michigan 48913 • Phone: (517) 334-8050 • <http://audgen.michigan.gov>

Doug A. Ringler, CPA, CIA
Auditor General

February 13, 2015

Mr. Jerrold M. Jung, Chair
State Transportation Commission
and
Kirk T. Steudle, P.E., Director
Michigan Department of Transportation
Murray Van Wagoner Transportation Building
Lansing, Michigan

Dear Mr. Jung and Mr. Steudle:

This is our report on the performance audit of the Office of Rail, Michigan Department of Transportation.

This report contains our report summary; a description of agency; our audit objectives, scope, and methodology and agency responses; comments, findings, recommendations, and agency preliminary responses; three exhibits, presented as supplemental information; and a glossary of abbreviations and terms.

Our comments, findings, and recommendations are organized by audit objective. The agency preliminary responses were taken from the agency's response at the end of our audit fieldwork. The *Michigan Compiled Laws* and administrative procedures require that the audited agency develop a plan to comply with the audit recommendations and submit it within 60 days after release of the audit report to the Office of Internal Audit Services, State Budget Office. Within 30 days of receipt, the Office of Internal Audit Services is required to review the plan and either accept the plan as final or contact the agency to take additional steps to finalize the plan.

We appreciate the courtesy and cooperation extended to us during this audit.

Sincerely,

Doug Ringler
Auditor General

TABLE OF CONTENTS

OFFICE OF RAIL MICHIGAN DEPARTMENT OF TRANSPORTATION

	<u>Page</u>
INTRODUCTION	
Report Summary	1
Report Letter	3
Description of Agency	7
Audit Objectives, Scope, and Methodology and Agency Responses	9
 COMMENTS, FINDINGS, RECOMMENDATIONS, AND AGENCY PRELIMINARY RESPONSES	
Effectiveness of Efforts to Facilitate Enhanced Mobility for Rail Passengers and the Efficient Movement of Goods Within Michigan's Rail System	14
1. Lease and Refurbishment of Commuter Rail Cab and Coach Cars	15
2. Performance Measurement	18
Effectiveness of Efforts to Monitor Contractors' Performance Related to the Delivery of Passenger Rail Service and the Upgrade of Passenger Rail Lines	20
3. Proper Identification of Capital and Maintenance Expenditures	20
4. Timeliness of Federal Draws	21
Effectiveness and Efficiency of Efforts to Ensure the Safety of Grade Crossings Within Michigan's Rail System	23
5. Maintenance Inspections	23
6. Monitoring of Maintenance Deficiencies	25
7. FoxPro Database System	26

SUPPLEMENTAL INFORMATION

Exhibit 1 - Michigan Railways Systems Maps	29
Exhibit 2 - Office of Rail Expenditures - State and Federal	32
Exhibit 3 - Office of Rail Expenditures by Category	33

GLOSSARY

Glossary of Abbreviations and Terms	35
-------------------------------------	----

Description of Agency

The Office of Rail, which operates under the Michigan Department of Transportation, is responsible for 665 miles of State-owned rail lines, safety of public at-grade highway railroad crossings, freight development, and support of passenger rail services. The Office of Rail's vision* statement outlined in the State Rail Plan* calls for the Office of Rail to provide a rail system that offers enhanced mobility for travelers and the efficient movement of goods while supporting economic development and environmental sustainability. The Office of Rail works to maintain and upgrade rail lines, to promote economic development on rail corridors, and to enforce safety regulations at railroad crossings. Since the start of calendar year 2011, passenger rail service in Michigan has averaged 790,000 rail passengers each year.

The Office of Rail consists of four sections:

1. The Railroad Operations Section consists of intercity passenger rail, light rail, commuter rail, and international rail connections. The Railroad Operations Section primarily serves Michigan's three State-supported passenger rail lines operated by Amtrak*: Pere Marquette, Blue Water, and Wolverine. Also, the Railroad Operations Section is in charge of commuter rail development and freight rail operations.
2. The Infrastructure Section is responsible for the construction, engineering, and maintenance of the State's accelerated and freight lines. The Infrastructure Section is also responsible for determining future work designs and work scope for acquiring the grants necessary to fund projects.
3. The Rail Safety Section manages the regulatory responsibility to assess the physical condition and safety needs of 4,685 public at-grade highway railroad crossings and the oversight of proper clearance in the vicinity of railroad tracks and rights-of-way and to ensure adequate sanitation and shelter facilities for railroad employees.
4. The Economic Development, Budget, and Contracts Section creates and manages the budget for the Office of Rail, provides assistance to rail companies and businesses for improved rail access, and provides loans to support rail infrastructure improvements.

* See glossary at end of report for definition.

The Office of Rail incurred expenditures of \$51.3 million and \$225.0 million for fiscal years 2012 and 2013, respectively. For the first eight months of fiscal year 2014, the Office of Rail incurred expenditures totaling \$95.1 million. Fiscal year 2013 expenditures included \$141.1 million related to the purchase of the Norfolk Southern Railway rail line. As of August 2014, the Office of Rail had 32.5 full-time equated employees.

Audit Objectives, Scope, and Methodology and Agency Responses

Audit Objectives

Our performance audit* of the Office of Rail, Michigan Department of Transportation (MDOT), had the following objectives:

1. To assess the effectiveness* of the Office of Rail's efforts to facilitate enhanced mobility for rail passengers and the efficient movement of goods within Michigan's rail system.
2. To assess the effectiveness of the Office of Rail's efforts to monitor contractors' performance related to the delivery of passenger rail service and the upgrade of passenger rail lines.
3. To assess the effectiveness and efficiency* of the Office of Rail's efforts to ensure the safety of grade crossings within Michigan's rail system.

Audit Scope

Our audit scope was to examine the program and other records related to the Office of Rail. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. Our audit procedures, which included a preliminary survey, audit fieldwork, report preparation, analysis of agency responses, and quality assurance, generally covered the period October 1, 2011 through June 30, 2014.

Our audit report includes supplemental information presented as Exhibits 1 through 3. Our audit was not directed toward expressing an opinion on this information.

* See glossary at end of report for definition.

Audit Methodology

We conducted a preliminary survey to gain an understanding of the Office of Rail's operations and internal control* in order to establish our audit objectives and methodology. As part of our preliminary survey, we:

- Interviewed Office of Rail staff to obtain an understanding of its organizational structure and operations.
- Reviewed selected policies and procedures and federal and State laws.
- Examined rail safety, bridge inspection, and grade crossing project files.
- Reviewed federal monitoring reports, the State Rail Plan, and the Amtrak operating agreements and maintenance agreement.
- Performed an analysis of the Office of Rail's expenditures.

We used the results of our preliminary survey to determine the extent of our detailed analysis and testing.

To accomplish our first objective, we:

- Reviewed federal monitoring reports.
- Reviewed the State Rail Plan.
- Interviewed Infrastructure Section staff.
- Obtained a list of infrastructure projects funded by State and/or federal funds.
- Randomly selected and reviewed nine infrastructure projects to determine if staff documented the need for the project and properly monitored the project by conducting site visits, budget reviews, and quality or quantity material reviews.

To accomplish our second objective, we:

- Interviewed Railroad Operations Section and Infrastructure Section staff.
- Reviewed and analyzed annual Amtrak operating agreements for the operation of State-supported passenger rail services in the State.

* See glossary at end of report for definition.

- Randomly selected and reviewed 10 infrastructure project contracts for proper approval, proper contract language, and detailed statements of work along with measurable goals* and objectives*.
- Obtained and reviewed contracts between the Office of Rail and consultants hired to assist the Office of Rail in monitoring the high-speed rail project.

To accomplish our third objective, we:

- Interviewed Rail Safety Section staff.
- Reviewed policies, procedures, and laws related to the Rail Safety Section.
- Obtained, analyzed, and reviewed information in the Rail Safety Section database to determine if the Rail Safety Section completed routine maintenance crossing inspections in a timely manner.
- Tested Diagnostic Study Team Reviews* to ensure that reviews were properly tracked, documented, and performed.

We based our audit conclusions on our audit efforts as described in the preceding paragraphs and the resulting material condition enhanced mobility for rail passengers * and reportable conditions* noted in the comments, findings, recommendations, and agency preliminary responses section. The material condition is more severe than a reportable condition and could impair management's ability to operate effectively or could adversely affect the judgement of an interested person concerning the effectiveness of the Office of Rail. The reportable conditions are less severe than a material condition but represent deficiencies in internal control.

When selecting activities or programs for audit, we direct our efforts based on assessment of risk and opportunities to improve the operations of State government. Consequently, we prepare our performance audit reports on an exception basis.

* See glossary at end of report for definition.

Agency Responses

Our audit report contains 7 findings and 8 corresponding recommendations. MDOT's preliminary response indicates that it agrees with all 8 recommendations.

The agency preliminary response that follows each recommendation in our report was taken from the agency's written comments and oral discussion at the end of our audit fieldwork. Section 18.1462 of the *Michigan Compiled Laws* and the State of Michigan Financial Management Guide (Part VII, Chapter 4, Section 100) require MDOT to develop a plan to comply with the audit recommendations and submit it within 60 days after release of the audit report to the Office of Internal Audit Services, State Budget Office. Within 30 days of receipt, the Office of Internal Audit Services is required to review the plan and either accept the plan as final or contact the agency to take additional steps to finalize the plan.

COMMENTS, FINDINGS, RECOMMENDATIONS, AND AGENCY PRELIMINARY RESPONSES

EFFECTIVENESS OF EFFORTS TO FACILITATE ENHANCED MOBILITY FOR RAIL PASSENGERS AND THE EFFICIENT MOVEMENT OF GOODS WITHIN MICHIGAN'S RAIL SYSTEM

COMMENT

Background: Michigan is a member of the Midwest Regional Rail Initiative* along with eight other states. The Initiative's goal is to develop a 3,000-mile high-speed rail system for the region with Chicago serving as the regional hub. In April 2009, the Federal Railroad Administration* published the High-Speed Rail Strategic Plan and, in June 2009, launched the High Speed Intercity Passenger Rail (HSIPR) Program* to create a national network of high-speed rail corridors.

The Michigan Department of Transportation (MDOT) was awarded several grants under the federal HSIPR Program totaling \$346.5 million. Funds from the grants were used for the acquisition and enhancement of 135 miles of track between Dearborn and Kalamazoo. MDOT purchased the track from the Norfolk Southern Railway in 2012 and has proceeded to make the necessary upgrades to the track allowing it to support passenger rail with speeds up to 110 miles per hour. Enhancements to the high-speed rail corridor have occurred subsequent to completion of our fieldwork.

MDOT was awarded a grant under the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) as part of the HSIPR Program. The Act required the states to assume a greater amount of funding for services on designated high-speed rail corridors (such as the Wolverine rail line), short-distance corridors or routes of not more than 750 miles, and services operated at the request of a state (such as the Pere Marquette and Blue Water rail lines). As a result, MDOT is required to reimburse Amtrak annually for operating costs associated with Amtrak providing passenger rail service in Michigan. According to the operating contract, the State's annual operating costs for fiscal year 2014 can total up to \$25.2 million. As a condition of accepting the initial HSIPR Program grants, MDOT is required to maintain the 135-mile high-speed rail corridor for 20 years, which includes reimbursing the annual operating costs to Amtrak.

* See glossary at end of report for definition.

Audit Objective: To assess the effectiveness of the Office of Rail's efforts to facilitate enhanced mobility for rail passengers and the efficient movement of goods within Michigan's rail system.

Audit Conclusion: Moderately effective.

Factors leading to this conclusion included:

- The Federal Railroad Administration has approved MDOT's State Rail Plan.
- MDOT purchased 135 miles of freight track and is currently upgrading that rail line to provide a high-speed passenger rail corridor between Detroit and Chicago.
- The Office of Rail contracts with Amtrak to provide passenger rail service on three rail lines in the State.
- The Office of Rail director is the chair of the Midwest Interstate Passenger Rail Commission, which promotes the benefits of a multi-state passenger rail system.
- The Office of Rail issued 19 loans during the audit period through the Freight Economic Development Program to encourage rail development and job growth.
- We noted a material condition related to the lease and refurbishment of cab and coach cars for two commuter rail projects and a reportable condition related to the lack of a comprehensive performance measurement process.

FINDING

1. Lease and Refurbishment of Commuter Rail Cab and Coach Cars

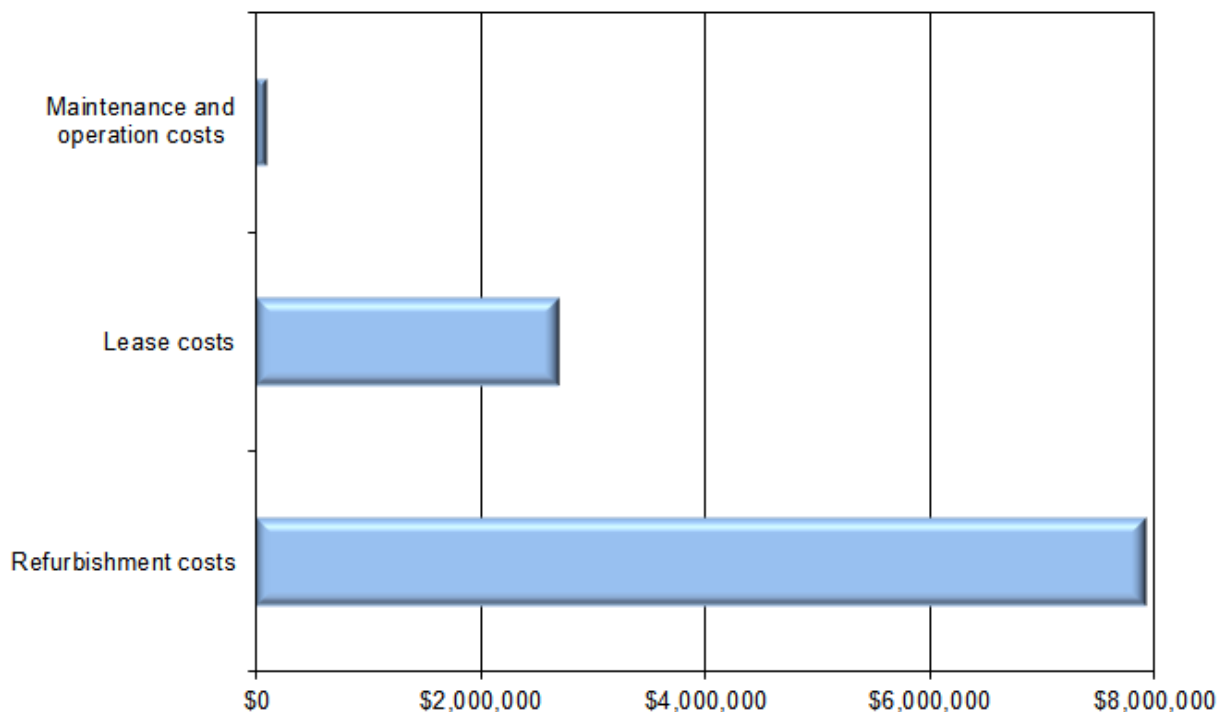
The Office of Rail expended \$9.5 million to lease and refurbish commuter rail cab and coach cars that it neither owns nor expects to use until at least 2017. In addition, the Office of Rail will be responsible for projected leasing costs of \$2.8 million, plus \$3.7 million in potential renovation costs for 14 coach cars. As a result, the Office of Rail did not effectively and efficiently oversee the lease and refurbishment of cab and coach cars designated for two commuter rail projects.

MDOT, in cooperation with the Southeast Michigan Council of Governments, leased and refurbished commuter rail cars for the proposed Ann Arbor - Detroit Regional Rail and the Washtenaw and Livingston Line Commuter Rail Project (WALLY). The project will use current railroad track; however, some track

work is needed to support the service. In addition, two train stations will have to be built on the Ann Arbor to Detroit corridor along with a yet-to-be-determined number to serve WALLY. MDOT entered into a contract with the Great Lakes Central Railroad on April 6, 2010 to refurbish 7 cab and 16 coach cars that MDOT planned to use on the Ann Arbor - Detroit Regional Rail and the WALLY lines.

The Great Lakes Central Railroad contract required MDOT to make monthly lease payments up to \$4,228 and \$3,730 for cab and coach cars, respectively, after the cars were refurbished or in service and fully tested for a period longer than 10 months. The contract allotted a total of \$2.7 million for lease costs and an additional \$7.9 million for refurbishment costs of the 7 cab and 16 coach cars, including adding restrooms to two coach cars. Also, the contract required MDOT to pay maintenance and operation costs for the cab and coach cars, which included costs such as moving the cab and/or coach cars to display sites. The contract allotted a total of \$100,000 for maintenance and operation costs.

Costs Allocated for Lease and Refurbishment of Cab and Coach Cars



The Federal Highway Administration (FHWA) funded \$2.8 million (26%) and the remaining funds came from the State's Comprehensive Transportation Fund in the amount of \$8.0 million (74%).

In total, as of May 2014, the Office of Rail had expended \$9.5 million to lease and refurbish the commuter rail cab and coach cars that it does not expect to use until 2017 on the Ann Arbor - Detroit Regional Rail and the WALLY lines. MDOT refurbished the cab and coach cars prior to the track work and construction of two stations. As a result, the Office of Rail will make additional lease payments of \$2.8 million for the cab and coach cars before the commuter rail service is expected to begin operation. Also, the Office of Rail may complete restroom updates in 14 coach cars that would result in \$3.7 million of additional costs.

The Office of Rail indicated that it planned to work on the stations and track in parallel with the refurbishment of the cab and coach cars. MDOT informed us that it intended to complete both the commuter track upgrades and the cab and coach car refurbishments by fiscal year 2015. However, the federal lead agency changed from the FHWA to the Federal Transit Administration after the contract was entered into. The Federal Transit Administration, the new lead agency, required a capacity analysis of the rail line and additional environmental studies to ensure that the existing intercity passenger and freight services and the new commuter rail service could reasonably coexist. The Office of Rail indicated that these additional requirements delayed the track work and the construction of the stations needed for the commuter rail project.

RECOMMENDATION

We recommend that the Office of Rail effectively and efficiently oversee the lease and refurbishment of cab and coach cars designated for two commuter rail projects.

AGENCY PRELIMINARY RESPONSE

MDOT provided us with the following response:

MDOT agrees that the oversight of the lease and refurbishment of the cab and coach cars for the two commuter rail projects should be effective and efficient.

MDOT believes it made every reasonable effort to coordinate the various phases of the project to help ensure the initiation of commuter service between Detroit and Ann Arbor in 2015.

Once it became clear that the change in federal oversight agencies would result in a significant delay in the start of that commuter service, the Office of Rail began to work with the Great Lakes Central Railroad and seek out interim uses for the cars (to offset some of the lease costs of the cars) until the commuter service was operational. MDOT has had some limited success with excursions, with cars being sub-leased for two events during fiscal year 2014. These sub-leases offset MDOT's costs for the time periods involved. The Office of Rail added restrooms to two of the coaches for the sole purpose of making the cars usable for longer routes such as intercity service, thereby expanding the possibilities for interim use. The Office of Rail remains optimistic that a viable, cost effective, interim use of the cars will be identified.

FINDING

2. Performance Measurement

The Office of Rail had not established a comprehensive performance measurement process to evaluate and improve the effectiveness of its operations. The broad range and importance of the Office of Rail's responsibilities and MDOT's 20-year commitment of \$500 million to a high-speed rail program make it imperative that the Office of Rail establish a performance measurement process for evaluating its efforts.

Performance measurement is an essential tool for managing the quality and costs of transportation services. An effective performance measurement process* collects and assesses performance data and compares results against a performance standard*, such as desired performance, past performance, or other like agencies' performance. Performance measures* should be clearly defined with regard to what is being measured, the data sources that will be used, and how often data will be collected. Data should be collected and used at regular intervals to assess performance; measure progress toward achieving program goals and objectives; and consider actions, such as policy or operational changes, for

* See glossary at end of report for definition.

improved performance. Thus, a performance measurement process can be used to develop recommendations to improve effectiveness and efficiency or change the desired performance standards or goals.

Although MDOT's State Rail Plan had established a vision statement, its goals, which were not quantified, were mainly aspirational in nature, did not provide a measurable basis for determining specific performance, and could not be objectively verified. Also, MDOT had neither established comprehensive performance standards and goals that described the desired level of outputs* and outcomes* nor identified what outputs and outcomes to measure.

RECOMMENDATION

We recommend that the Office of Rail establish a comprehensive performance measurement process to evaluate and improve the effectiveness of its operations.

AGENCY PRELIMINARY RESPONSE

MDOT provided us with the following response:

MDOT agrees that a comprehensive performance measurement process could help MDOT to evaluate and improve the effectiveness of its operations.

While no comprehensive performance measurement process is in place, a number of performance measures relating to Office of Rail activities are included in both MDOT and State of Michigan dashboards. The Office of Rail will expand that effort to include other appropriate measures and measurement metrics as part of a comprehensive performance measurement process.

* See glossary at end of report for definition.

EFFECTIVENESS OF EFFORTS TO MONITOR CONTRACTORS' PERFORMANCE RELATED TO THE DELIVERY OF PASSENGER RAIL SERVICE AND THE UPGRADE OF PASSENGER RAIL LINES

COMMENT

Audit Objective: To assess the effectiveness of the Office of Rail's efforts to monitor contractors' performance related to the delivery of passenger rail service and the upgrade of passenger rail lines.

Audit Conclusion: **Moderately effective.**

Factors leading to this conclusion included:

- The Office of Rail began monitoring cancellations and late departures for passenger rail service provided by Amtrak during the audit period.
- The Office of Rail utilized a consultant to help review monthly Amtrak invoices.
- The Office of Rail contracted with consultants to provide expertise in the oversight of contractors and to monitor progress on the high-speed rail corridor upgrades.
- Our review of billings submitted to the Office of Rail by contractors for reimbursement disclosed an immaterial error rate.
- We noted reportable conditions related to the proper identification of all capital and maintenance expenditures related to the Dearborn to Kalamazoo: Service Development Program* and the timeliness of federal draws.

FINDING

3. Proper Identification of Capital and Maintenance Expenditures

The Office of Rail did not properly identify all capital and maintenance expenditures related to the Dearborn to Kalamazoo: Service Development Program. As a result, the Federal Railroad Administration could issue a sanction or disallowance of approximately \$300,000 in funds related to noncompliance.

* See glossary at end of report for definition.

Title 49, section 26106(c) of the *United States Code* requires that high-speed rail corridor development projects use federal funds for expenditures related to capital projects. Expenditures related to maintenance projects are not eligible for reimbursement.

The Office of Rail informed us that Amtrak charges capital and maintenance expenditures based on the employee who performed the work rather than by the type of work conducted. Amtrak had designated "capital" and "maintenance" employees; however, the employees may work on both capital projects and maintenance improvements. The Office of Rail determined that capital projects and maintenance improvements from October 2012 through September 2013 totaled \$7,394,039, of which \$4,131,439 (56%) was for capital projects and \$2,422,097 (33%) was for maintenance improvements. The Office of Rail was not able to definitively identify the remaining \$840,503 as capital projects or maintenance improvements. Consequently, the Office of Rail allocated \$529,865 (63%) to capital projects and \$310,638 (37%) to maintenance improvements by using the same percentages from the amounts of capital and maintenance costs that it was able to identify.

RECOMMENDATION

We recommend that the Office of Rail properly identify all capital and maintenance expenditures related to the Dearborn to Kalamazoo: Service Development Program.

AGENCY PRELIMINARY RESPONSE

MDOT provided us with the following response:

MDOT agrees with the recommendation and will continue to work with Amtrak and the Federal Railroad Administration to ensure proper identification of capital and maintenance expenditures and proper allocation of costs as they relate to the Dearborn to Kalamazoo: Service Development Program.

FINDING

4. Timeliness of Federal Draws

The Office of Rail did not request federal funds on a timely basis for expenditures related to federal awards.

Department of Technology, Management, and Budget Administrative Guide procedure 1210.06 states that funds are to be requested as close as is administratively feasible to the State's actual cash outlay for federal programs.

The Office of Rail advanced payments monthly to Amtrak based on the spending plan. Amtrak submitted invoices and supporting documentation months after work was completed during the period December 2012 through December 2013. Although Amtrak did not submit invoices timely, MDOT, as owner of the track, was responsible for management of the project. The timing of the submitted invoices and the Office of Rail's lack of staff made the reconciliation and approval of the invoices difficult. It also resulted in delays in drawing down federal funds.

During fiscal year 2013 and the first nine months of fiscal year 2014, the Office of Rail incurred expenditures of \$84.9 million for the Dearborn to Kalamazoo: Service Development Program contract with Amtrak. However, during that same period, the Office of Rail drew down federal funds totaling only \$17.4 million, of which \$16.1 million (93%) was drawn down between March and June 2014. During this time period, the Office of Rail did not request reimbursement and draw federal funds for approximately 11 months and 5 months in fiscal years 2013 and 2014, respectively. Based on the State's common cash fund interest rate, we estimated that the State lost interest of \$54,335 because the Office of Rail did not draw these federal funds on a timely basis.

RECOMMENDATION

We recommend that the Office of Rail request federal reimbursement for eligible expenditures on a timely basis.

AGENCY PRELIMINARY RESPONSE

MDOT provided us with the following response:

MDOT agrees with the recommendation and will develop procedures to help ensure both the timely review of Amtrak's cost reconciliation invoices and the timely request for federal reimbursement of eligible expenditures.

EFFECTIVENESS AND EFFICIENCY OF EFFORTS TO ENSURE THE SAFETY OF GRADE CROSSINGS WITHIN MICHIGAN'S RAIL SYSTEM

COMMENT

Audit Objective: To assess the effectiveness and efficiency of the Office of Rail's efforts to ensure the safety of grade crossings within Michigan's rail system.

Audit Conclusion: **Moderately effective.**

Factors leading to this conclusion included:

- The Office of Rail ensured that Diagnostic Study Team Reviews were properly tracked and performed.
- The Office of Rail's construction crossing review files were adequately documented.
- We noted reportable conditions related to routine maintenance inspections, timely correction of maintenance deficiencies, and a database system that could not generate relevant railroad crossing inspection information and lacked proper access controls* over user activity.

FINDING

5. Maintenance Inspections

The Office of Rail did not have a formal process to ensure timely routine maintenance inspections of all public at-grade highway railroad crossings. The implementation of a formal process to inspect public at-grade highway railroad crossings in a timely manner and at appropriate intervals is important to maintain the safety and confidence of the traveling public.

Section 462.301(5) of the *Michigan Compiled Laws* enables the Office of Rail to perform routine maintenance inspections of public at-grade railroad crossings and serve notice to affected parties of the need for corrective action. However, the Section does not establish how often inspections should occur. Instead, the Office

* See glossary at end of report for definition.

of Rail relied on an undocumented informal policy that it would inspect all public at-grade highway railroad crossings every 18 to 24 months.

We analyzed the Office of Rail's inspections of the State's 4,685 public at-grade highway railroad crossings for fiscal year 2010 through the first eight months of fiscal year 2014. Our analysis disclosed:

Number of Months From Prior Inspection to Current Inspection	Number of Routine Inspections Conducted	Average Number of Months Since Last Inspection	Range of Months Inspection Was Overdue	Percent of Total Public At-Grade Highway Railroad Crossings
0 - 24 months	3,311	13		70.7%
25 - 32 months	1,150	27	1 - 8	24.5%
Not inspected	224	35	9 - 26	4.8%
Total	4,685			100.0%

The Office of Rail's database system is 19 years old and has limitations affecting its efficient use. The system does not have the ability to notify safety inspectors when any of the 4,685 public at-grade highway railroad crossings in the State are due for an inspection. In addition, the Office of Rail lacked a formal written procedure that identified the time frames for when the routine maintenance inspections should occur.

RECOMMENDATION

We recommend that the Office of Rail implement a formal process to ensure timely routine maintenance inspections of all public at-grade highway railroad crossings.

AGENCY PRELIMINARY RESPONSE

MDOT provided us with the following response:

MDOT agrees with the recommendation and will develop a written procedure, utilizing a risk-based approach, regarding the timing of routine maintenance inspections at public at-grade crossings that will include a discussion of whether the current informal goal of reviewing all crossings every 24 months is appropriate.

MDOT is in the process of obtaining updated computer software to assist in its grade crossing safety efforts. As part of this effort, MDOT will seek software that will alert railroad safety inspectors when the pre-determined period of time has elapsed since the last inspection of a given crossing.

FINDING

6. Monitoring of Maintenance Deficiencies

The Office of Rail did not have a process to verify the timely correction of maintenance deficiencies identified at public at-grade highway railroad crossings. The implementation of a process to correct maintenance deficiencies at public at-grade highway railroad crossings is important to maintain the safety and confidence of the traveling public.

Railroads and road authorities are required to maintain public at-grade highway railroad crossings for which they have responsibility under the Michigan Rail Code of 1993. Section 462.301(5) of the *Michigan Compiled Laws* requires railroads or road authorities to expeditiously correct deficiencies identified through routine inspections completed by MDOT. The responsible party shall advise the Office of Rail in writing when the work is completed.

We determined that the Office of Rail relied on railroads and road authorities to submit written affidavits stating that they had corrected the deficiencies. The Office of Rail did not verify whether the corrections were actually made but instead relied on its informal process of performing routine inspections of railroad crossings every 24 months to determine if a prior noted deficiency was corrected (see Finding 5).

Of the 4,685 public at-grade highway railroad crossings throughout the State, 1,094 (23%) crossings contained 1,557 maintenance deficiencies. The Office of Rail inspectors noted deficiencies such as sight obstructions, lack of no-passing markings, and needed repairs of crossing surfaces and warning devices.

RECOMMENDATION

We recommend that the Office of Rail establish a process to verify the timely correction of maintenance deficiencies identified at public at-grade highway railroad crossings.

AGENCY PRELIMINARY RESPONSE

MDOT provided us with the following response:

MDOT agrees with the recommendation.

Working with the Office of Commission Audits or others, as appropriate, MDOT will establish a risk-based process to confirm the veracity of affidavits completed and submitted by railroads and road authorities who certified the correction of the identified maintenance deficiency.

FINDING

7. FoxPro Database System

The Office of Rail did not have a database system with the ability to generate all relevant railroad crossing inspection information necessary for the Rail Safety Section. Also, the Office of Rail did not ensure that its database system had proper access controls over user activity. As a result, the Office of Rail utilized a database system that was not able to efficiently support the Rail Safety Section's functions.

Section 3.3 of the Control Objectives for Information and Related Technology* (COBIT), 5th Edition, Process Assessment Model, recommends that an entity manage information technology assets through their life cycle to make sure that their use delivers value at optimal cost, they remain operational and fit for purpose, they are accounted for and physically protected, and those assets that are critical to support service capability are reliable and available. In addition, COBIT recommends that entities identify assets that are critical in providing service capability and take steps to maximize their reliability and availability to support business needs.

The FoxPro database system did not automatically generate relevant information regarding prior inspections for use by safety inspectors when accessing the database related to routine maintenance deficiency follow-up. Also, the Office of Rail notified us that the FoxPro database system lacked basic access controls, such as the ability to log individual user activity and edits.

* See glossary at end of report for definition.

The Office of Rail used the FoxPro database system in its rail safety operations for 19 years. The Office of Rail informed us that its repeated attempts to obtain updates to the system were unsuccessful.

RECOMMENDATIONS

We recommend that the Office of Rail develop a database system with the ability to generate all relevant railroad crossing inspection information necessary for the Rail Safety Section.

We also recommend that the Office of Rail ensure that its database system has proper access controls over user activity.

AGENCY PRELIMINARY RESPONSE

MDOT provided us with the following response:

MDOT agrees with the recommendations and is in the process of obtaining updated computer software to assist in its grade-crossing safety efforts. The software will have the proper access controls over user activity, to the extent allowed by cost-effectiveness considerations.

SUPPLEMENTAL INFORMATION

OFFICE OF RAIL
Michigan Department of Transportation
Michigan Railways Systems Maps



This exhibit continued on next page.

Source: Asset Management, Michigan Department of Transportation.

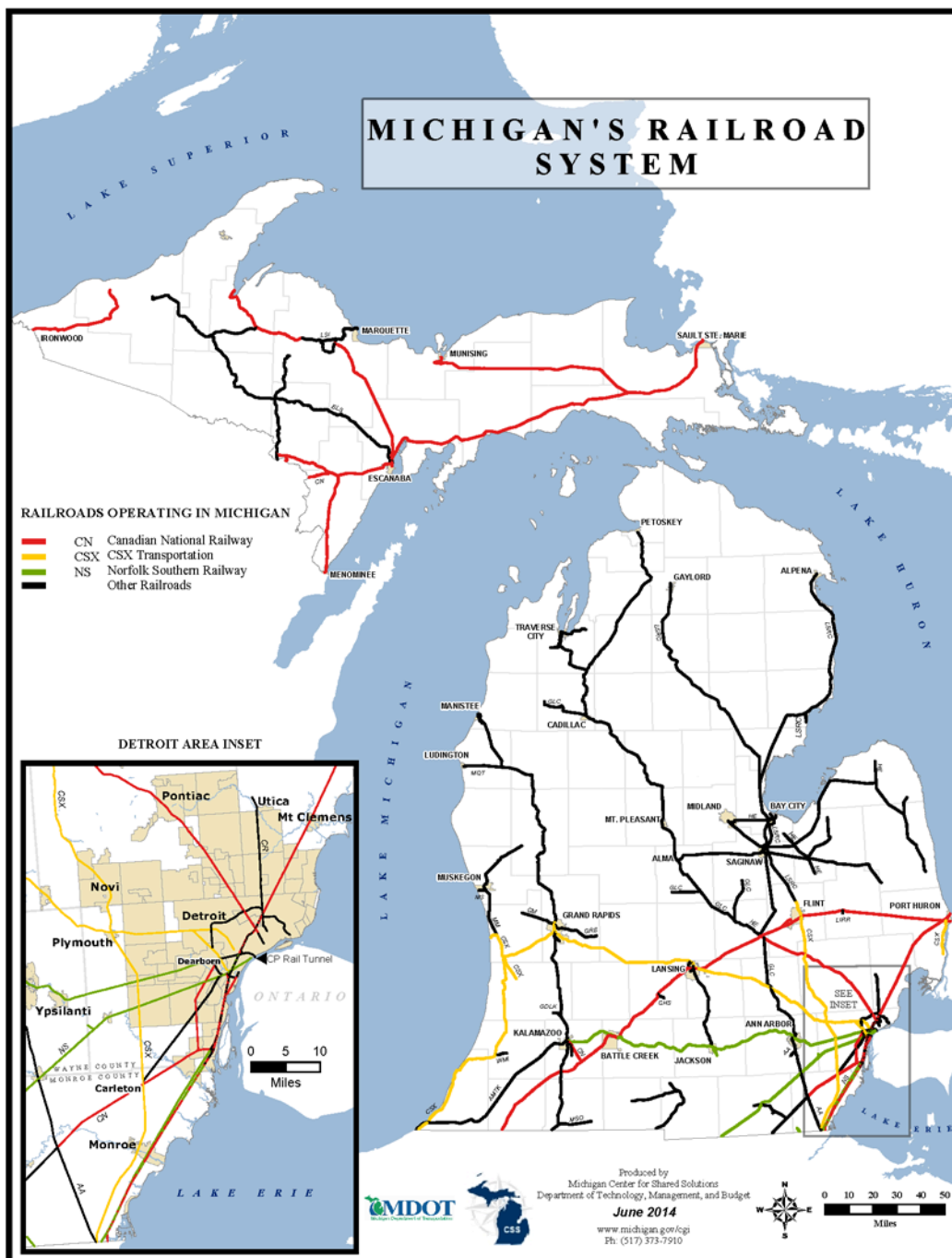
OFFICE OF RAIL
Michigan Department of Transportation
Michigan Railways Systems Maps



This exhibit continued on next page.

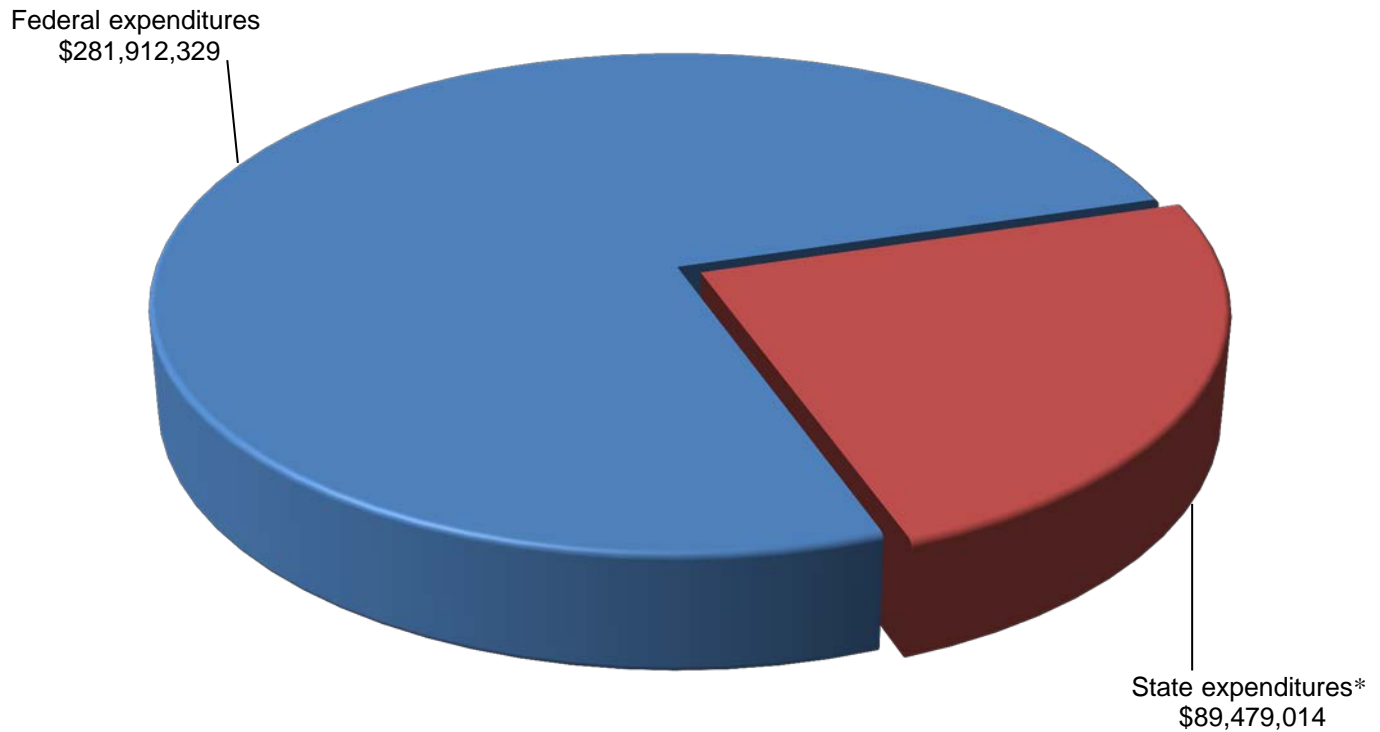
Source: Asset Management, Michigan Department of Transportation.

OFFICE OF RAIL
Michigan Department of Transportation
Michigan Railways Systems Maps



Source: Michigan Center for Shared Solutions, Department of Technology, Management, and Budget.

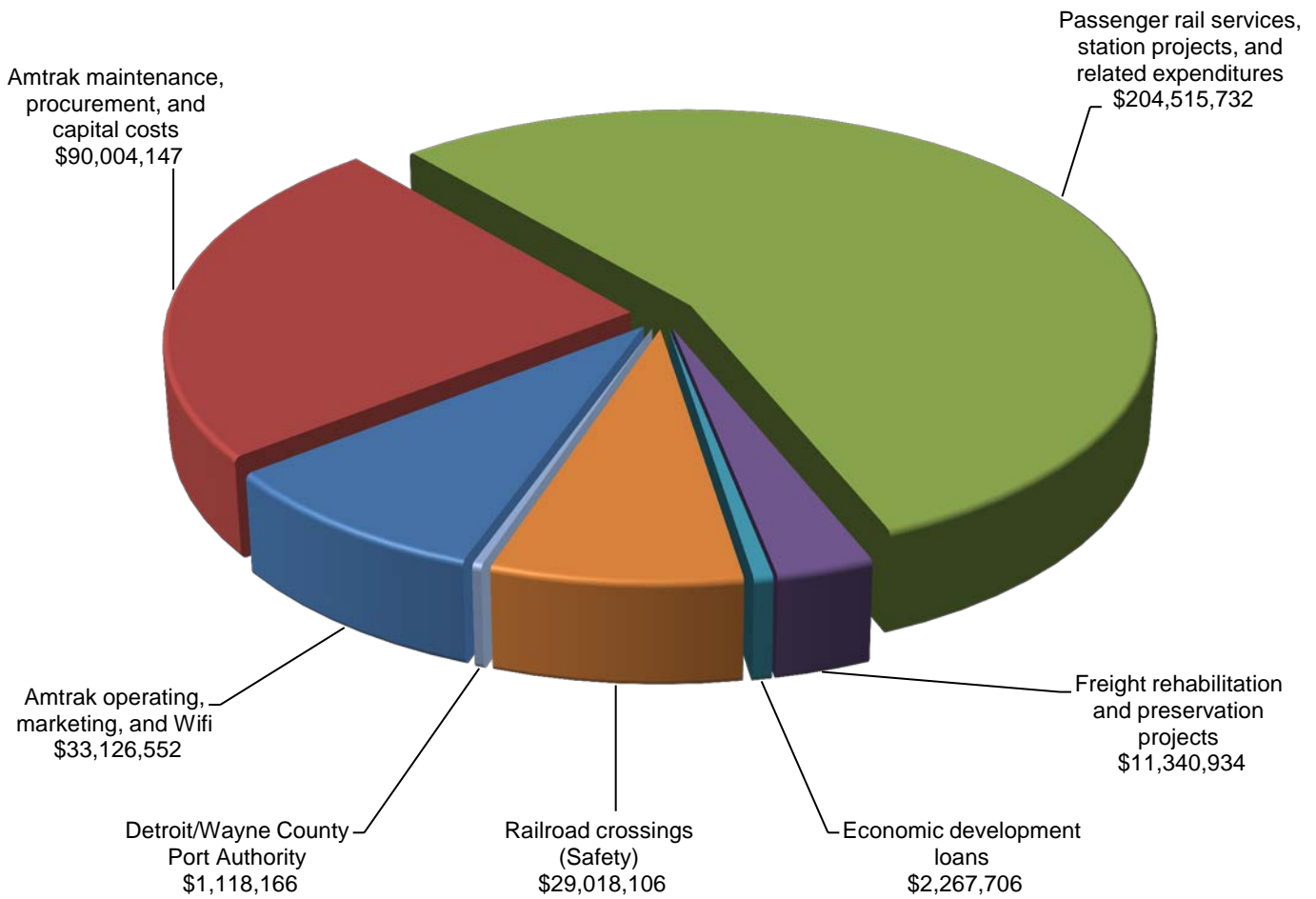
OFFICE OF RAIL
Michigan Department of Transportation (MDOT)
Office of Rail Expenditures - State and Federal
October 1, 2011 Through May 31, 2014



* Funding sources include:
MDOT General Fund/general purpose
State Trunkline Fund
Comprehensive Transportation Fund
Michigan Transportation Fund

Source: The Office of the Auditor General compiled this exhibit based on information obtained from the State's accounting system.

OFFICE OF RAIL
Michigan Department of Transportation
Office of Rail Expenditures by Category
October 1, 2011 Through May 31, 2014



Source: The Office of the Auditor General compiled this exhibit based on information obtained from the State's accounting system.

GLOSSARY

Glossary of Abbreviations and Terms

access controls	Controls that protect data from unauthorized modification, loss, or disclosure by restricting access and detecting inappropriate access attempts.
Amtrak	The U.S. government-owned passenger train service established in 1971 and operated by the National Railroad Passenger Corporation.
Control Objectives for Information and Related Technology (COBIT)	A framework, control objectives, and audit guidelines published by the IT Governance Institute as a generally applicable and accepted standard for good practices for controls over information technology.
Dearborn to Kalamazoo: Service Development Program	A federal program designed for MDOT to acquire and upgrade a 135-mile section of the Norfolk Southern Railway rail line from Dearborn to Kalamazoo to allow 110 miles per hour passenger operations.
Diagnostic Study Team Reviews	Safety determinations regarding existing public at-grade railroad crossings. MDOT reviews public crossings Statewide to identify crossings for potential safety enhancements.
effectiveness	Success in achieving mission and goals.
efficiency	Achieving the most outputs and the most outcomes practical with the minimum amount of resources.
Federal Railroad Administration	An administration created by the Department of Transportation Act of 1966. The Federal Railroad Administration's mission is to enable the safe, reliable, and efficient movement of people and goods.

FHWA	Federal Highway Administration.
goal	An intended outcome of a program or an entity to accomplish its mission.
High Speed Intercity Passenger Rail (HSIPR) Program	A program started by the federal government in June 2009 to create a national network of high-speed rail corridors.
internal control	The plan, policies, methods, and procedures adopted by management to meet its mission, goals, and objectives. Internal control includes the processes for planning, organizing, directing, and controlling program operations. It also includes the systems for measuring, reporting, and monitoring program performance. Internal control serves as a defense in safeguarding assets and in preventing and detecting errors; fraud; violations of laws, regulations, and provisions of contracts and grant agreements; or abuse.
material condition	A matter that, in the auditor's judgment, is more severe than a reportable condition and could impair the ability of management to operate a program in an effective and efficient manner and/or could adversely affect the judgment of an interested person concerning the effectiveness and efficiency of the program.
MDOT	Michigan Department of Transportation.
Midwest Regional Rail Initiative	An initiative developed in 1996 that includes nine Midwestern states. The goal is to develop a 3,000-mile high-speed rail system for the region with Chicago serving as the regional hub.
objective	Specific outcome(s) that a program or an entity seeks to achieve its goals.

outcome	An actual impact of a program or an entity.
output	A product or a service produced by a program or an entity.
performance audit	An audit that provides findings or conclusions based on an evaluation of sufficient, appropriate evidence against criteria. Performance audits provide objective analysis to assist management and those charged with governance and oversight in using the information to improve program performance and operations, reduce costs, facilitate decision making by parties with responsibility to oversee or initiate corrective action, and contribute to public accountability.
performance measure	A composite of key indicators of a program's or an activity's inputs, outputs, outcomes, productivity, timeliness, and/or quality. Performance measures are a means of evaluating policies and programs by measuring results against agreed upon program goals or standards.
performance measurement process	A process for capturing and processing data to determine if a program or an entity is achieving its goals.
performance standard	A desired level of output or outcome.
reportable condition	A matter that, in the auditor's judgment, is less severe than a material condition and falls within any of the following categories: an opportunity for improvement within the context of the audit objectives; a deficiency in internal control that is significant within the context of the audit objectives; all instances of fraud; illegal acts unless they are inconsequential within the context of the audit objectives; significant violations of provisions of contracts or grant agreements; and significant abuse that has occurred or is likely to have occurred.

State Rail Plan	A plan developed by MDOT to guide the future of Michigan's rail system for both passenger and freight rail over the next 20 years. The plan identifies current and future system needs and makes recommendations to encourage ongoing rail investments. The plan meets the requirements established by the federal Passenger Rail Investment and Improvement Act of 2008, which positions the State to receive additional federal funding for rail projects.
vision	The main purpose of a program or an entity or the reason that the program or the entity was established.
WALLY	Washtenaw and Livingston Line Commuter Rail Project.

